29 CLAIMS

- 1. Use of lipopeptide preparations as anti-tilted-peptide agents.
- Use according to claim 1, wherein the lipopeptide preparations comprise lipopeptides which are selected from the group consisting of cyclic and linear lipopeptides, their homologous and derivatives and mixtures thereof.
- 3. Use according to claim 2, wherein the cyclic lipopeptides are selected from the group consisting of surfactins, iturins and fengycins.
- 4. Use according to claim 3, wherein surfactins have formula (I)

$$CO \rightarrow L AA_1 \rightarrow L Leu \rightarrow D Leu$$

$$CH_2 \qquad \qquad L AA_4$$

$$CH_3(CH_3)CH(CH_2)_n \qquad CH$$

$$O \leftarrow L AA_7 \leftarrow D Leu \leftarrow L Asp$$

wherein the total number of carbon atoms in the fatty acid chain is comprised between 12 to 17, n being comprised between 6 and 11, AA_1 is Glu or Gln, AA_4 is Val or Ala and AA_7 is Val, Ile or Leu.

- 5. Use according to any of claims 3 and 4, wherein the surfactins are selected from the group consisting in a surfactin wherein n is comprised between 7 and 9, AA₁ is Glu, AA₄ is Val and AA₇ is Leu.
- 6. Use according to claim 5 wherein the surfactins are selected from the group consisting of an iso-branched β-hydroxyled fatty acid chain containing 13 carbon atoms (SC13), a surfactin with a linear β-hydroxyled fatty acid chain containing 14 carbon atoms (SC14), and a surfactin with an iso-branched β-hydroxyled fatty acid chain containing 15 carbon atoms (SC15).
- 7. Use according to any of claims 3 to 6, wherein iturins have formula (II)

wherein the total number of carbon atoms in the fatty acid chain is comprised between from 13 to 17, n being comprised between 6 and 10, AA_1 is Asn or Asp, AA_4 is Gln, Pro or Ser, and AA_5 is Pro, Glu, or Gln, AA_6 is Asn or Ser, and AA_7 is Ser, Asn or Thr.

8. Use according to any of claims 3 and 7, wherein the iturins are selected from the group consisting in an iturin wherein n is comprised between 7 and 10, AA₁ is Asn, AA₄ is Gln, AA₅ is Pro, AA₆ is Asn and AA₇ is Ser.

ed 3 2 get to be come.

- 9. Use according to claim 8 wherein the iturins are selected from the group consisting of a linear β-amino fatty acid chain containing 14 carbon atoms (IC14), an iturin with an iso-branched β-amino fatty acid chain containing 15 carbon atoms (IC15), an iturin with an iso-branched or linear β-amino fatty acid chain containing 16 carbon atoms (IC16), an iturin with an anteiso-branched β-amino fatty acid chain containing 17 carbon atoms (IC17)
- 10. Use according to any of claims 3 to 9, wherein fengycins have formula (III)

$$CH_3(CH_2)_nCHOH(CH_2)CO \longrightarrow L Glu \longrightarrow D Orn \longrightarrow AA_3 \longrightarrow D Allo Thr \longrightarrow L Glu \longrightarrow D AA_6$$

$$\downarrow \qquad \qquad \qquad \downarrow$$

$$O \longleftarrow L Ille \longleftarrow AA_9 \longleftarrow L Gln \longleftarrow L Pro$$

wherein the total number of carbon atoms in the fatty acid chain is comprised between from 12 to 18, n being comprised between 8 and 14, AA_3 is D Tyr or L Tyr, AA_6 is Val or Ala, and AA_9 is L Tyr or D Tyr.

- 11. Use according to claim 10, wherein fengycin is fengycin A with a β-hydroxyled fatty acid chain containing 16 carbon atoms (FAC16), wherein AA₃ is D Tyr, AA ₆ is Ala and AA₉ is L Tyr.
- 12. Use according to claim 2, wherein the linear lipopeptides are selected from the group consisting of surfactins, iturins and fengycins.
- 13. Use according to claim 12, wherein each of the linear lipopeptides is obtainable by chemical modification of the corresponding cyclic lipopeptide.
- 14. Use according to claim 13, wherein the linear lipopeptides (LSC12 to LSC17 have formula (IV)

wherein the total number of carbon atoms in the fatty acid chain is comprised between 12 and 17, n being comprised between 8 and 13.

- 15. Use according to claim 12, wherein each of the linear lipopeptides is obtainable by chemical synthesis.
- Use according to claim 15, wherein each of the linear lipopeptides (LSSC4 to LSSC24)
 has the formula (V)

wherein the total number of carbon atoms in the fatty acid chain is 4 to 24; n being comprised between 0 and 20

- 17. Use according to any of claims 14 and 16, wherein AA₁ is Glu or Gln, AA₄ is Val or Ala and AA₇ is Val, lle or Leu.
- 18. Use according to claim 17, wherein AA_1 is Glu, AA_4 is Val and AA_7 is Leu.
- 19. Use according to any of the preceding claims, wherein the lipopeptide preparations comprise at least two lipopeptides.
- 20. Use according to claim 19, wherein the lipopeptides belong to different lipopeptide families.
- 21. Use according to claim 20, wherein one of the lipopeptides is selected from the group consisting of SC13 and SC15 and the other lipopeptide is FAC16.
- 22. Use according to any of the preceding claims, wherein the lipopeptides have been obtained by a method chosen from biosynthesis by a micro-organism, chemical synthesis and chemical modifications of biosynthetised lipopeptides.
- 23. Use according to claim 22, wherein the micro-organism is chosen from the group consisting in *Pseudomonas spp, Bacillus spp., Arthrobacter spp, Streptomyces spp., Serratia spp., Gluconobacter spp., and Agrobacterium spp.*
- 24. Use according to claim 23, wherein the species are chosen from the group consisting of Bacillus subtilis, Bacillus licheniformis, and Bacillus globigii, Streptomyces aurantiacus, Arthrobacter MIS 38, Serratia marcescens, Gluconobacter cerinu, and Agrobacterium tumefaciens
- 25. Use according to claim 24, wherein the *Bacillus subtilis* is a strain chosen from the group consisting of ATCC 7067 and S499.
- 26. Process for the production of a lipopeptide preparation according to any of claims 22 to 25, which comprises an aerobic step followed by a microaerobic step.
- 27. Process according to claim 26, which produces a foam containing a concentrated mixture of different lipopeptide families